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ABSTRACT

The lesson plans for gifted/talented students in grades 5 and 6 focus on logical thinking enrichment activities. Information on each activity is presented in terms of objectives, entry skills, teacher's approaches, student activities, resources, and followup/evaluation. Among activities described are completing analogies and determining analogous relationships; identifying similarities; learning to be concise; noting inconsistencies; building a case by logically sequencing material; understanding and verifying inferences (through solving "mini mysteries"); identifying and completing syllogisms; and computing probability. (CL)

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UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students will complete an analogy by choosing the word from a set of choices.	The student has shown that he/she can deal with difficult material without becoming easily frustrated.
Students will write 3 analogies of their own.	The student can read at a 5th grade level or above.
Introduce the unit on logical thinking.	The student can use a dictionary.
	The meaning of the word "Synonym".

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TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Begin with consideration of old saying, "The empty barrel makes the greatest noise", as it applies to different men's thought. Like Shakespeare's "The empty vessel makes the greatest sound". Henry V, IV - 4 Ask if they can think of example of this. Our emphasis in this unit is on investigating types of thought such as analogies, inferences, syllogisms, etc. in order to reason from a position of strength, rather than to argue from a position based on emotion. Consider situations or controversies where argument can be clouded by emotion such as ERA; or the cutting of government funds to a certain program; or someone being called safe or out in a ball game; or someone is selected to play on a team; or someone tells why he considers a certain movie the best. Emphasize the importance of compromise in our form of government. Logical argument can help that come about.	Discussion of points made. Assignment: Complete Assignment Write 5 analogies on the back of their own.	Worksheet FOLLOW-UP/EVALUATION

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS

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TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
First type of thought considered - analogies. It involves a relationship of 2 pairs. Consider the first uncompleted pairs on the worksheet. Do first 2 on sheet together. Encourage them to use the dictionary if unsure of any word. Give them a pair and see if they can give you matching pair such as ball - bat. Encourage them to give you 2 pairs.		FOLLOW-UP/EVALUATION Ability to write analogies of their own. Able to answer 70% of the worksheet correctly.

Determining Analogous Relationships

Words

dye	ruler	auction	throne	whinny	lengthy	wring
stale	instrument	rude	sandal	colt	criticism	stirrup
missile	loom	barrel	ocean	pluck	descendent	trout
hellicopter						brief

1. Bureau Furniture bugle _____
2. Loyal Faithful short _____
3. Infant Crib emperor _____
4. Belt Buckle saddle _____
5. Mosquito Swamp dolphin _____
6. Arm Bracelet foot _____
7. Frog Croak horse _____
8. Barge Craft bullet _____
9. Brush Bristles rifle _____
10. Witness Court bidder _____
11. Snout Pig gills _____
12. Artist Canvas weaver _____
13. Slave Master _____ ancestor
14. Sharp Dull _____ fresh
15. King Prince _____ stallion
16. Plump Slender polite _____
17. Hull Ship rotor _____
18. Sigh Moan tint _____
19. Flute Blow harp _____
20. Whimper Weep twist _____
21. Mansion Shack compliment _____

Answer Sheet For Analogous

1. instrument
2. brief
3. throne
4. stirrup
5. ocean
6. sandal
7. whinny
8. missile
9. barrel
10. auction
11. trout
12. loom
13. descendent
14. stale
15. colt
16. rude
17. helicopter
18. dye
19. pluck
20. wring
21. criticism

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Review analogies through oral class work.	Introduction to analogies.

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Correct yesterday's work. If questions concerning any one item, take the time to have someone explain the relationship. Select certain students to write on the board 5 words needed to complete their analogies. Have the students read theirs to the class. Class members will tell the word needed to complete analogy. Assign 2nd worksheet on analogies. On the back they are to make up 7 as they did yesterday. Tomorrow they will give this to person nearby. This person will pick words from word list to complete the analogy. This will then be graded by originator and shown to the other person.	Correcting assignment. Sharing analogies with class. Assignment: Worksheet Write 7 on back with answers and additional possibilities.	Worksheet FOLLOW-UP/EVALUATION Determined by the % of correct answers.

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Look at each row of words. Think how the words in capital letters go together. Find a word in the WORD BOX that will go with the underlined word in the same way. Write the word on the line at the end of the row.

WORD BOX

beetle						shaft
cellar	abbreviation	depot	numerals	punctuation	inhabit	clean
hazardous	courageous	frog	attic	moisten	cathedral	drill
deer	quiver	odor	absorb	studio	banquet	maps

1. HEART	ORGAN	comma	_____
2. INCORRECT	ACCURATE	cowardly	_____
3. MECHANIC	WRENCH	dentist	_____
4. QUILL	PORCUPINE	antenna	_____
5. RAZOR	SHAVE	sponge	_____
6. HOCKEY	SPORT	Dr.	_____
7. SHELVES	LIBRARY	pews	_____
8. CATERPILLAR	BUTTERFLY	tadpole	_____
9. ALARM	ALERT	filter	_____
10. SHRILL	PIERCING	dangerous	_____
11. HINT	CLUE	scent	_____
12. PUDDLE	POND	dinner	_____
13. CAMERA	FILM	atlas	_____
14. GUN	HOLSTER	arrow	_____
15. AID	ASSIST	dampen	_____
16. PARAGRAPH	CHAPTER	antlers	_____
17. ENTRANCE	EXIT	basement	_____
18. TELEPHONE	RECEIVER	calendar	_____
19. MAGNIFY	ENLARGE	dwell	_____
20. ATHLETE	GYMNASIUM	artist	_____
21. THRESHER	FARM	locomotive	_____

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Answer Sheet For Analogous

1. punctuation
2. courageous
3. drill
4. beetle
5. absorb
6. abbreviation
7. cathedral
8. frog
9. clean
10. hazardous
11. odor
12. banquet
13. maps
14. quiver
15. moisten
16. deer
17. attic
18. numerals
19. inhabit
20. studio
21. depot

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Review analogies through oral and written work.	Ability to write a complete sentence.
Identify out of a group of 4 items, 3 that are similar and the one that does not belong. Describe in concise language what is the similarity that exists.	Ability to write legibly.

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Correct yesterday's work. Explain any analogy if it is confusing.	Correct yesterday's work.	Worksheet Overhead
Exchange papers so that students can do each other's analogies. Work is then corrected and grade shown to other student.	Exchange and correct each other's analogies.	Sample of language on sheet for overhead.
Discuss the importance of being able to describe something clearly and concisely. Examples: Supreme Court - presentation of briefs are timed. Shopping - you want something and many people are waiting. On the job - you are the boss and have to explain to someone how to do something. Time means money. You use a taxi and have to give directions. You write for a newspaper and describe an incident.	Orally as class cut extra wordage from a language sample. Do worksheet of 4 items, underline the one that does not belong. In a concise sentence, tell why the other 3 are similar.	
Ask students for example.	Optional: Game Group divided in 2. Given analogies. Must choose from list to complete analogy. Timer limits time to decide.	FOLLOW-UP/EVALUATION Ability to describe basis for similarity.
Use overhead - have sample language. Students to have to cut and change wording to make more concise.		
Determining comparability is important in providing the basis and facts needed in order to make decisions. We will do worksheet in which we describe in concise sentences the similarity between items.		

Similarities

1. machine hat car toaster
2. tomato cabbage peach onion
3. Converse Gaston Todd Lincoln
4. Lincoln Memorial Aldrich Waterman
5. Royce Waterman Todd Robinson
6. deer cougar rabbit squirrel
7. eyes glasses nose hair
8. book boy dog beast
9. mountain valley hill rise
10. Rapunzel Hansel and Gretel Charlotte's Web Snow White
11. maple elm chestnut lilac
12. Toyota VW K-car MG
13. NBC ABC CBS VIP
14. cumulus tornado hurricane typhoon
15. Washington Grant Bush Jefferson
16. rayon wool dacron nylon
17. pizza pancakes stew chop suey
18. holocaust crash game disaster
19. lion car pretty table
20. smile upset happy gay
21. picnic banquet buffet dismissal
22. scant short overflow little

Answers For Similarities

1. hat
2. peach
3. Todd
4. Waterman
5. Royce
6. cougar
7. glasses
8. dog
9. valley
10. Charlotte's Web
11. lilac
12. K-Car
13. VIP
14. cumulus
15. Bush
16. wool
17. pancakes
18. game
19. car
20. upset
21. dismissal
22. overflow

OVERHEAD

A man has been robbed at gunpoint. He is asked to describe his assailant. Decide what part of his testimony is unnecessary in this description.

I was walking down this beautifully flowered Vine Avenue. Someone touched me on my shoulder. I had on my old red coat. I turned. Facing me was a short, little man holding a rusty revolver. He seemed nervous. He was sweating. Unshaven, with a scar running down one cheek, and wearing glasses, he looked a mess. His shirt hung over his pants. His brown shoes were scuffed. He got away with all my money.

If you were the detecitves, what other questions would you ask to elicit precise information?

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UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students will identify similarities.	Introduction to similarities.
Students will describe a common object in concise terms.	Identification of descriptive words such as adjectives and adverbs not usually needed in a brief description.

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Correct yesterday's work. Look at overhead of brief description. Pick out those words not needed. Identify what an adjective and adverb and have examples on master. Point out that the situation determines the use of descriptive words. In literature, if used correctly, they are valued. Do first couple of a worksheet similar to the one done yesterday. Think if you had to describe to someone how to do something concisely that you take for granted, such as tying a shoe, could you do it? Relate to a boss describing a task to employee. Ask someone to give a couple examples: Taking a drink with straw, painting a house.	Correct yesterday's work. Oral discussion involving point brought up in discussion. Describe a common experience concisely. Assignment: As yesterday, set of 10 items, describe similarity. Describe 3 common objects by looks or what they are used for, as if you were going into a store and they had never been heard of, you may not use object's name. Examples: pencil, shoe, ball point pen, ruler.	Worksheet Overhead Master with sample of language. FOLLOW-UP/EVALUATION

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Similarities

Follow same procedure as yesterday.

1.	turkey	pilgrim	glass	Mayflower
2.	nose	sack	shirt	shoes
3.	ground	snow	rain	hail
4.	elephant	dog	cat	snake
5.	hammer	house	saw	screw driver
6.	February	Spring	Autumn	Winter
7.	radio	T V	record player	song
8.	author	title	pencil	publisher
9.	skyscraper	apple tree	tower	mountain
10.	made	waste	cap	hate
11.	hope	row	hot	slow
12.	run	sitting	jog	jump
13.	maple	elm	lilac	locust
14.	hawk	swallow	eagle	owl
15.	percent	sash	decimal	fraction

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Select 3 of the following and describe them as if the reader had never heard of them, or knew what they are used for. You can do this by describing them phsically, or telling how you would manipulate them, or telling what their purpose is. All of these criteria should be part of your description.

pencil shoe ballpoint pen ruler shovel
can opener car coaster wagon drinking fountain
refrigerator chair window shade
drinking straw cup lamp airplane

Answers For Similarities

1. glass
2. nose
3. ground
4. snake
5. house
6. February
7. song
8. pencil
9. apple tree
10. cap
11. hot
12. sitting
13. lilac
14. swallow
15. sash

Overhead

Adjective - word describing a noun — yellow flower

Adverb - word describing a verb — walked slowly

Give some examples of your own.

Reduce the following to the basic action that took place.

Something was happening. Boaz heard exclamations, breathings, the rustle of sleeve cloth in large, frantic, and futile graspings - all without understanding. Immediately there was an impact on the floor, and with it the unmistakable clink of metal. Boaz even heard that the metal was minted, and that the coins were gold. He understood. A coin sack, gripped not quite carefully enough for a moment under the other's overcoat, had shifted, slipped, escaped, and fallen.

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from Footfalls by Wilbur Daniel Steele

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students will evaluate their own work in terms of conciseness. Optional - Students will learn the game of chess. As an activity they can do in their spare time, and it depends largely on logical thought.	Work completed from previous day.

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Correct previous day's work. Have students read their descriptions and have classmates tell what they think is described. From list of words cross out those which are adjectives or adverbs. Use examples of their work from Lesson 3 on same handout, have them change wording to economize. Ask them on basis of what we have said last few days to reread their assignment for today and make last minute changes before turning in their assignments. Teach them basics of chess.	Correct work. Read descriptions. Select and eliminate wordiness from sample. Evaluate today's assignment. Learn basics of chess. Moves each player can make. Object of game. Give them some situations using overhead. Ask them to explain what they would do. Play chess for a period of time.	Sample of words and writing. Overhead Chess Sets FOLLOW-UP/EVALUATION Quality of assignments. Subjective decision for student writing correctly identified 7 of 10 comparable groupings. Can play chess.

OVERHEAD

Which are the adjectives, adverbs?

in summer	golden pond	sharp dresser
jumped quickly	fell down	basic course
crossing the stream	a white flower	mask
winter dreams	without	red
hopped crazily	angry shouts	never
corn popped	never voted	withdrew

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students will note inconsistencies in a language sample. Students will complete sheet by themselves. Students will be given topics to write on. It is their job to place inconsistencies in their sample.	An understanding of the meaning of consistent and inconsistent.

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TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Ask someone to tell the class meaning of consistent and inconsistent. Have students prepared to read definition given in dictionary. Ask if class can give some examples. Give examples of referee and teacher. It is important in both cases for the people they control to understand the limits of acceptable and unacceptable behavior. Sometimes in writing we do not keep the material consistent with the story line or main idea of paragraph, based on the overall idea we will check a story sample for inconsistencies and replace them with more appropriate language. We will do part of this together. Their assignment to finish this and also finish sheet where we match person with what we could expect them to say. Start them on this. Example: "All rise for his honor." - bailiff	Discussion concerning term. Do part of sheets together orally. Work by themselves.	Worksheets Dictionary FOLLOW-UP/EVALUATION The number of students who were able to finish the sheet with few, if any, errors.

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Noting Inconsistencies

As you read this story you will find words that do not make sense in the sentence or in the paragraph. Draw a box around these words. Then find the correct words (with an accompanying letter) in the ANSWER BOX. Write the letter in the box you have drawn in the story. Read the revised sentence. It should make sense. All the items in the ANSWER BOX are to be used in the story.

THE SKIPPER

Captain Bob Bartlett, acclaimed for his conquest of the North Pole, had little reason for that expedition. At eighteen, he was in command of his own jet plane which he piloted along the inhospitable coast of Labrador. Even then, when other vessels in command of older men were failing, Captain Bob brought in pay loads of slaves.

Those were rough days even for a hardy man. Not only were there several boys of storms, ice, and the hardest labor, but one had to be one hundred percent MAN to hold a place of esteem among the fine musicians. Every man was judged only on brawn and nerve. Bob Bartlett, a quiet lad, not only held his place among those hardy men, but became their mascot. They respected him for his daring, his fearlessness, and his incomparable seamanship.

I was with him on that expedition to the equator. I recall that one day our schooner was riding in the teeth of a raging storm. I was lying on the mast, for there was no other comfortable place on the boat. Captain Bob came down from the quarter-deck to fill the buckets. Chairs, boxes, and everything loose in the room skidded and tumbled about as the schooner rolled and tossed and dove. Bracing himself against the chart table, he slowly and methodically crammed the matches into the bowl of his pipe.

As our little vessel rolled and steamed erratically, Captain Bob's weather-beaten face puckered with a grin as he chuckled aloud, "Let her buck! Let her buck!" The rougher it was, the more afraid our grizzly captain liked it.

Our rough and hardened crew learned about a softer side of their timid captain. Yet I can swear that not one man considered it his secret.

Just before leaving on the expedition, it was pointed out that there was danger of being frozen in for the winter in the tropical ice. Bob Bartlett pleaded with the newspaper reporters, "Oh, don't print that! If my mother reads that, she'll go visiting all the time we're gone." And he meant it.

Later, at every port at which we made an announcement during the expedition, Captain Bob headed for the post office as soon as the necessary customs duties were attended to. He was looking for presents for his mother. And no matter how important the other messages might be, they would wait until he had gone off to one side and read the ones from his mother. Then he would turn to what he considered to be more important matters.

ANSWER BOX

A. his pipe	F. ideal training	K. seals	P. in my bunk
B. letters from	G. be worrying	L. better	Q. brightened
C. rough crew	H. a prearranged call	M. tobacco	R. fearless
D. North Pole	I. untold hardships	N. leader	S. arctic
E. sealing schooner	J. a weakness	O. less	T. pitched

Answers For Inconsistencies

Paragraph 1 - Change little reason to ideal training - F

" 1 - Change jet plane to sealing schooner - E

" 1 - Change slaves to seals - K

Paragraph 2 - Change several boys to untold hardships - I

" 2 - Change fine musicians to rough crew - C

" 2 - Change mascot to leader - N

Paragraph 3 - Change equator to North Pole - D

" 3 - Change on the mast to in my bunk - P

" 3 - Change the buckets to his pipe - A

" 3 - Change matches to tobacco - M

Paragraph 4 - Change steamed to pitched - T

" 4 - Change puckered to brightened - Q

" 4 - Change more afraid to better - L

Paragraph 5 - Change timid to fearless - R

" 5 - Change his secret to a weakness - J

Paragraph 6 - Change tropical to arctic - S

" 6 - Change go visiting to be worrying - G

Paragraph 7 - Change an announcement to a prearranged call - H

" 7 - Change presents for to letters from - B

" 7 - Change more to less - O

Consistency - Matching job holders with what they say

1. All rise for his honor. ———
2. I now pronounce you man and wife. ———
3. Strike three. ———
4. It weighs 5 pounds even. ———
5. Clean your room.
6. Your book is overdue.
7. This award is for your fine work on the safety patrol. ———
8. I promise to cut spending. ———
9. Your section is out of tune. ———
10. Case dismissed. ———
11. Open your mouth and say ah. ———
12. You were going 50 in a 40 mile an hour zone. ———
13. These plants need rain. ———
14. We lack sufficient arms to protect the country. ———
15. I object, your honor. ———
16. The minutes of the meeting are as follows. ———

A. lawyer	B. judge	C. policeman
D. librarian	E. secretary	F. bailiff
G. minister	H. umpire	I. butcher
J. conductor	K. mother	L. principal
M. general	N. doctor	O. farmer
P. candidate for office		

Answers For Matching

1. bailiff
2. minister
3. umpire
4. butcher
5. mother
6. librarian
7. principal
8. candidate for office
9. conductor
10. judge
11. doctor
12. policeman
13. farmer
14. general
15. lawyer
16. secretary

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students will have to make a decision which materials to use in building a case for a certain topic. They will have to be ready to explain how they would use the material - why it would be a logical element in building their case. They will do a 2nd sheet on inconsistencies.	Previous work with inconsistency. Some previous experience with charts.

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Yesterday, we worked with inconsistencies. Today, part of our time will deal with building a case for yourself in explaining an issue. Give students the example of experience they may get in doing this--a debate. Explain how it works. Ask them if they can think of examples where they would have to defend a position in everyday life: a.) wanting an increase in job pay, b.) explaining why one baseball player is better, c.) explaining why you should be elected, d.) considering the purchase of a new house or staying where you are.	Discussion concerning building a case for a personal position. Using sheets, orally choosing which facts you could use. Using 2 charts to defend a certain position. Correcting work from yesterday in fashion designated by teacher.	Worksheets
	Possible, depending on time, doing sheet by themselves like one done previous day.	FOLLOW-UP/EVALUATION
We will be looking at sheets that give us information about different countries. We will try to use these to draw some conclusions about conditions within these countries and relationships between them.		

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS

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TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Here are some points for consideration: a.) Which do you think are the richest countries? (based on what?) b.) Which do you think are the poorest? c.) Which countries may have poor farm land, or not enough? d.) Which countries have a lot of industry? What do you base that conclusion on? e.) Which countries have people who suffer from malnutrition, or different infectious diseases? f.) Which countries have a lot of cars? g.) If you lived on a fixed income, which countries would you not want to live in? h.) In which countries do you think people might suffer from heart disease, hardening of the arteries, cancer, or pollution related illnesses? We will correct the work from yesterday. Depending on the time, teacher may want to assign sheet on inconsistencies. The students would be helped only with the first paragraph this time.		**FOLLOW-UP/EVALUATION** Ability to do new sheet similar to yesterdays with little direction.

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Noting Inconsistencies

As you read this story you will find words that do not make sense in the sentence or in the paragraph. Draw a box around these words. Then find the correct words (with an accompanying letter) in the ANSWER BOX. Write the letter in the box you have drawn in the story. Read the revised sentence. It should make sense. All the items in the ANSWER BOX are to be used in the story.

DARTS OF FIRE

Half an hour passed, an hour; and samething happened. The ball of quills might have been a stone for all it moved, and the lynx might have been frozen to marble.

At last the porcupine decided that its offspring had gone away. Slowly, frantically, it was unrolling its ball of metallic armor. Slowly, slowly, the bristling ball straightened out and shriveled.

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Not quite entirely had the porcupine unrolled when it tasted its enemy. In that instant the lynx struck. The paw, with rigid claws curving like talons, shot under the tender belly and came back in a tuft of feathers. Had the porcupine been entirely unrolled, or had it not detected its enemy a first of a second before the blow was struck, the tongue would have escaped unscathed. But a side-flick of the tail sank sharp quills into it as it was withdrawn.

Everything happened at once — the blow, the escape, the squeal of agony from the porcupine, the big cat's purr of sudden hurt and astonishment. The lynx's bad vision got the best of her. She sprang savagely at the thing that had hurt her. But the porcupine squealing and chirping, and trying feebly to roll up into its ball-protection, withdrew its tail again, and again the big cat squalled with hurt and astonishment.

Then she fell to backing away and sneezing, her nose colorful with quills like a monstrous pin-cushion. She brushed her claw with her paws, trying to dislodge the insects, thrust it into the snow, and rubbed it against twigs and branches, all the time leaping about, ahead, sidewise, up and down in a frenzy of pain and fright.

She sneezed continually, and her brush of a tail was doing its best toward lashing about by giving quick, violent jerks. She quit her feast and quieted down for a long minute. Then suddenly she leaped, without warning, straight up in the air, at the same time emitting a long and most melodious squall. Then she sprang away, up the trail squalling with every leap she made.

ANSWER BOX

A. temper	F. enemy	K. nothing	P. impregnable
B. lengthened	G. ripping movement	L. nose	Q. paw
C. stub	H. fiery darts	M. fraction	R. grunting
D. counter-blow	I. antics	N. terrible	S. bristling
E. cautiously	J. flicked out	O. squall	T. discovered

Answers For Noting Inconsistencies

Paragraph 1 - Change something to nothing - K

Paragraph 2 - Change offspring to enemy - F
" 2 - Change frantically to cautiously - E
" 2 - Change metallic to impregnable - P
" 2 - Change shriveled to lengthened - B

Paragraph 3 - Change tasted to discovered - T
" 3 - Change tuft of feathers to ripping movement - G
" 3 - Change first to fraction - M
" 3 - Change tongue to paw - Q

Paragraph 4 - Change escape to counterblow - D
" 4 - Change purr to squall - O
" 4 - Change vision to temper - A
" 4 - Change chirping to grunting - R
" 4 - Change withdrew to flicked out - J

Paragraph 5 - Change colorful to bristling - S
" 5 - Change claw to nose - L
" 5 - Change insects to fiery darts - H

Paragraph 6 - Change brush to stub - C
" 6 - Change feast to antics - I
" 6 - Change melodious to terrible - N

COUNTRIES

For 1980

Country	Population Density (per sq. mi.)	Per Capita Income	Life Expectancy	Literacy	Change in Consumer Prices
Afghanistan	60.77	$ 168	39.90/m 40.70/f	12%	.04%
Argentina	25.46	2,331	65.16/m 71.38/f	93	100.8
Brazil	37.44	1,523	57.61/m 61.10/f	70	82.8
Canada	6.10	10,296	69.34/m 76.36/f	98	10.1
China	278.24	232	60.70/m 64.40/f	70	not available
France	252.19	7,908	69.20/m 77.20/f	99	13.3
West Germany	642.49	9,278	68.61/m 75.21/f	99	5.5
India	519.13	150	41.89/m 40.55/f	36	11.5
Kenya	72.9	337	46.90/m 51.20/f	40	13.8
Niger	10.2	250	39.40/m 42.50/f	5	10.3
Poland	295.61	2,500	66.92/m 74.55/f	98	68.0
Saudi Arabia	9.01	11,500	44.20/m 46.50/f	15	3.2
U.S.S.R.	30.83	2,600	64.00/m 74.00/f	99	0.7
U.S.	62.43	8,612	68.70/m 76.50/f	99	13.5

WORLD PRODUCTION OF CRUDE OIL

Leading Nations - Thousands of Barrels

1978			1979		
Nation	Production	% of Total Production	Nation	Production	% of Total Production
1. U.S.S.R.	4,186,550	18.6%	1. U.S.S.R.	4,277,800	19.7%
2. Saudi Arabia	3,374,425	14.7	2. Saudi Arabia	3,613,500	16.7
3. United States	3,111,625	13.7	3. United States	947,905	4.3
4. Iraq	1,253,775	5.5	4. Iraq	917,610	4.2
5. Iran	1,107,775	5.0	5. Venezuela	790,955	3.6
6. Venezuela	859,575	3.8	6. Peoples Republic of China	771,610	3.6
7. Nigeria	841,325	3.7	7. Nigeria	750,075	3.5
8. Kuwait	808,475	3.5	8. Mexico	707,005	3.3
9. Peoples Republic of China	773,800	3.4	9. Libya	652,255	3.0
10. Libya	753,725	3.3	10. United Arab Emirates	623,785	2.9
11. United Arab Emirates	669,775	2.9	11. Iran	606,630	2.8
12. Indonesia	580,350	2.5	12. Kuwait	604,440	2.8
13. United Kingdom	573,050	2.5	13. United Kingdom	592,030	2.7
14. Canada	545,675	2.4	14. Indonesia	575,605	2.7
15. Mexico	532,900	2.3	15. Canada	519,760	2.4
16. Algeria	414,275	1.8	16. Algeria	369,380	1.7
17. Neutral Zone	206,225	0.9	17. Qatar	172,280	0.8
TOTAL	20,593,300		TOTAL	21,701,075	

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WORLD DAILY DIETARY ENERGY SUPPLY
IN RELATION TO REQUIREMENTS

Region	Dietary Energy				Supply as percent of requirements			
	66-68	69-71	72-74	75-77	66-68	69-71	72-74	75-77
Developing Market Economies	2,122	2,206	2,193	2,219	81	85	84	85
Africa	2,136	2,194	2,174	2,208	82	84	84	85
Latin America	2,511	2,531	2,518	2,552	97	97	97	98
Far East	1,959	2,079	2,053	2,053	75	80	80	80
Near East	2,413	2,431	2,498	2,657	93	94	96	102
Others	2,268	2,326	2,371	2,345	87	89	91	90
Asian Centrally planned Economies	2,087	2,224	2,317	2,420	80	86	89	95
Total Developing Countries	2,110	2,211	2,233	2,282	81	85	86	88
Developed Market Economies	3,200	3,275	3,323	3,329	123	126	128	128
North America	3,384	3,467	3,493	3,519	130	133	134	135
Western Europe	3,256	3,333	3,389	3,378	125	128	130	130
Oceania	3,288	3,360	3,365	3,418	126	129	129	131
Others	2,701	2,769	2,852	2,872	104	107	110	110
Eastern Europe and U.S.S.R.	3,300	3,379	3,413	3,465	127	130	131	133
Total Developed Countries	3,232	3,309	3,353	3,373	124	127	129	130
World	2,457	2,541	2,559	2,590	95	98	98	99

Daily calorie requirement is 3,000 for men, 2,200 for women.

AVERAGE CONSUMER COST OF FUELS

Fuel	1974	1975	1976	1977	1978	1979	1980
Leaded regular gasoline (cent/gallon)	44.8	43.7	43.1	43.2	41.0	49.8	119.1
Residential Heating Oil (cent/gallon)	29.4	29.3	30.2	31.2	31.7	40.8	97.8
Residential natural gas (cent/million MCF cubic feet)	123.4	132.8	145.4	162.2	163.5	185.3	391.5
Residential electricity (cent/million KWH kilowatt hours)	2.63	2.73	2.77	2.81	2.76	2.66	5.36

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Learn the meaning of the term inference. Be able to give an example of one. Be able to select information from sample upon which inference is based. Solve mystery based on facts in Mini-Mystery.	Assignment from yesterday.

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TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Correct work first if it was assigned previous day.	If assignment made yesterday, this will be corrected first.	Worksheets
Point out to students that private eyes in movies often solve crimes by noting inconsistencies. They also develop their case by making inferences. Ask if anyone knows what an inference is. If not, ask the following: If you meet someone with a black eye, what would you think? If your dog starts barking in the middle of the night, what would you think? If you get an F on a test, what would you think? If a fire starts in a kitchen, what would you think? If you see little tunnels all over your lawn, what might you think?	Discussion to develop meaning of inference. Students will write their own sample and possible inferences. Read a Mini-Mystery and draw conclusions based on inferences and clues given. Assignment - finish sheet started on inferences.	FOLLOW-UP/EVALUATION
In all cases you were making inferences. Ask them to define what one is. Have student read definition of an inference.		
Ask them to write down on paper provided, a situation in which an inference can be drawn (describe it) and then tell about what inference they would make.		

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Ask some students to read theirs. Ask other students to tell what inference they would make based on the described situation. We will read a Mini-Mystery in which we make a judgement concerning the crime based on inferences made. We will read from selection, then they have to answer questions based on ideas and words that suggest possible answers. We will do one, they have to answer the other 5 by themselves.		FOLLOW-UP/EVALUATION Ability to make up an example of an inference.

MINI-MYSTERY

At 9:00 in the morning, Conrad Sleuth rang the bell of Alan Sand's studio apartment. Conrad's niece, Agatha, opened the door. He stepped into a tiny hall.

"Uncle Conrad," Agatha said, "Alan Sand's roommate has been rushed to the hospital. His name is Jed Carr. Somebody hit him on the head and knocked him out. When the ambulance came, he was hardly breathing."

Conrad followed her into a small room. There was not much furniture. A chest stood against one wall. A table stood between unmade twin beds at the end of the room. There was only one chair, a straight chair with no arms. It was piled with clothing. The sleeve of a shirt hung down one side. The legs of some trousers hung down the other. On top were a necktie, some socks, and a pair of cuff links.

Alan Sand, a young man in a robe and pajamas, stood near the window. When he saw Conrad Sleuth, he took a deep breath.

"I've already told everything to this policewoman," he said. "But here it is all over again. As I said, Jed and I went to the same party last night. Jed's date wanted to stay out late. But mine wanted to leave early, so I drove her home. Then I came back here and put on my pajamas and robe. I read for a while.

"When I became sleepy, I put my robe on the chair there. Then I got into bed and fell asleep. I half woke up when Jed got home. I saw him piling his clothes on the chair. You see, they're still there. Then I went back to sleep.

"I don't know how much later it was that the noise woke me up. Something was going on in our front hall. I jumped out of bed, grabbed my robe, and rushed out there. Jed was in his pajamas, fighting with a big man in a mask. The man had a club and knocked Jed out.

"When the man saw me, he ran out the door. I saw that Jed was hurt, so I didn't try to follow the man. I called for a police ambulance and waited downstairs until it came."

Conrad Sleuth shook his head. "Mr. Sand," he said, "why did you fight with your roommate? Agatha, have you found anything that might have been the weapon? Jed Carr will tell us if he wakes up. If he doesn't wake up, Sand, you're in trouble."

Why did Sleuth suspect Sand? For an extra clue, turn to page 24. **—Julia Piggin**

(The solution is in the Teachers' Edition.)

For an extra clue to the "Mini-Mystery" on page 21, unscramble these words:

BORE
NO
IRACH
DRUNE
SHOTCEL

Answers For Mini-Mystery Page 46
and Small Mini-Mystery

Clues: robe, on, chair, under, clothes

Alan lied because he said the robe was under the clothes. Yet when he rushed out of the room, he would have pulled the robe off the chair, upsetting the clothes. They were still on the chair.

1. Nick noticed the time.
2. He tugged his hat over his eyes.
3. Nick knew when to expect Officer Bailey.
4. Nick hadn't known the convict had a gun.
5. Nick kept working as usual while he tricked the convict.
6. The officer thought Nick had knocked the convict down.

Verifying Inferences

Every day after school, Nick shines shoes. His stand is located just around the corner from Central Ave., a busy street. Nick has been at this spot for a year and he knows nearly everyone who passes by.

One afternoon a tall stranger ducked around the corner and looked sharply up and down Central Ave. Nick's stand caught his eye, and he hurried over to it. He dropped into the seat and muttered, "Shine 'em, kid". Then the big man slumped down and tugged his hat over his eyes as if he were asleep.

Nick slowly rubbed polish into the dusty shoes. Although Nick hadn't recognized the man at first, he thought his face was familiar. Suddenly, Nick remembered where he had seen it. Last evening a television news flash had warned of a jail break by a prisoner who was nicknamed Slippery Sam. Nick realized his customer was the escaped convict!

Nick swallowed nervously, but he kept on working with his head down. As he polished the shoes, he noticed that it was almost four o'clock. Officer Bailey would be coming down Central Ave. any moment now. Quickly, the young shoeshine boy decided on a plan.

"Would you put your feet together, please?", Nick asked casually. "I want to check the shine." Then he bent lower over the pair of shoes.

Nick glanced over his shoulder. Across the street, Officer Bailey waved to him. "Hi, Officer Bailey!", Nick yelled and motioned for him to come over.

At this, the stranger whipped out a gun and leaped to his feet. He turned to run, but staggered and fell helplessly on his face. The gun flew across the sidewalk.

Within seconds, Officer Bailey had handcuffed Slippery Sam. "How did you ever manage to knock him down Nick?", the officer wondered.

"I didn't", Nick laughed. "I just tied his shoestrings together!"

1. Why could you think that Nick probably had a watch?
2. How do you know the convict didn't want to be recognized?
3. How do you know the officer kept a regular schedule?
4. Why might you believe Nick risked his life without realizing it?
5. Why could you think Nick did not want the convict to realize he had been recognized?
6. Why could you think the officer did not see the start of the attempted escape?

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students review the term inference.	Yesterday's Assignment.
Students select material from a sample that one could base on inference.	
Students solve a Mini-Mystery as a class.	
Students are asked to start thinking about writing their own mystery with some material left in to allow for the reader to make inferences.	
Students solve a mystery that has no prepared or additional clues as in Mini-Mysteries. They write their own conclusion.	

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Ask someone as review to tell us what an inference is. Ask someone in class to give us an example of an inference. Read some of the student samples not given orally in class the other day. Ask students to suggest what inference they think can be drawn. We will correct yesterday's paper. We will solve a Mini-Mystery which has some given clues. Ask them to tell you what inferences you made in drawing up your conclusion. Tell students that tomorrow you are going to ask them to write a mystery with some facts included so that inferences can be made.	Students suggest inferences to samples written yesterday. Correct yesterday's work. Solve a Mini-Mystery. Think about possible mystery they will write tomorrow. Solve a mystery and write down conclusions and inferences.	Worksheets Corrected papers from yesterday. FOLLOW-UP/EVALUATION

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Ask them to just sit there for a minute and think of a possible mystery they could write about. Call on some students to give theirs. Encourage them not to plagiarize entire plots from a TV show they saw, but to come up with their own. Pass out mystery to students. Their job will be to read it, then draw a conclusion and write it as to who they think is responsible for the murder and to write 2 inferences that led to that conclusion.		FOLLOW-UP/EVALUATION Ability to make a conclusion based on the inferences they made.

MINI-MYSTERY

"My brother has been missing for a night and a day," Gary Lake said. "Can anyone here at police headquarters help me?"

"I'm sorry, but we don't put out alarms for missing persons that soon," said Officer Agatha Sleuth.

Her uncle, Detective Conrad Sleuth, nodded. "But tell us what your brother looks like," he said. "We can see if there's been any report on him."

"He looks just like me," Gary said. "We're twins. We dress alike, even though we're in college, because we like being twins. We're very good friends, too. That's why we both took orderly jobs at Milton Hospital for the summer. It's true that we've been dating two student nurses who work there. But mainly we just wanted to work at the same place."

"Is that where you saw your brother last?" Agatha asked.

"Yes," Gary said. "Last night was slow at the hospital. On our break, we usually get coffee from the machine in the cafeteria. But George thought there would be time to get some from the coffee shop across the street. It's better coffee.

"Well, he hurried out to get it, and I waited. He left around 9:00. By 9:30 he wasn't back. I didn't want him to get in trouble, so I covered for him. But he didn't come home last night or today. Our mom is nearly crazy with worry. What can I do?"

"I could go to the hospital and the coffee house and ask some questions," Agatha said.

"All right," her uncle said. "But don't get the boys in trouble."

At the hospital, Agatha spoke with Mrs. Marie Moore. Mrs. Moore had been on duty at the front desk the night before.

"Did you see any hospital employees go out at about 9:00?" Agatha asked.

"It was a slow night," Mrs. Moore said, "but it's still hard to remember. Let's see. Dr. Morley went out. My favorite student nurse, Sue Leary, went out. Oh, yes, and George Lake rushed out. I guess he was going for coffee. I think Dr. Moss might have gone out about then, too. After that, things got busier, and I wasn't watching closely."

Agatha smiled and asked, "Where is George Lake? I think you know where he is, and I think Sue Leary does, too."

Mrs. Moore gasped. "All right," she said. "They eloped. How did you know I knew?"

Why did Agatha suspect that Mrs. Moore knew that George and Sue planned to elope the night before? For an extra clue, turn to page 26.

—Julia Piggin

(The solution is in the Teachers' Edition.)

For an extra clue to the "Mini-Mystery" on page 24, unscramble these words:

WENK
TI
SAW
REEGGO

MINI-MYSTERY

"Good morning, Mr. Clark."

Officer Agatha Sleuth came down the stairs of her apartment building. Mr. Clark, who took care of the building, was sweeping the hall floor.

"Why, Officer Sleuth, you're back," Mr. Clark said. "Did you have a good trip?"

"It was a wonderful two weeks," Agatha said. "But do you know where Ann Ramirez is? She took such good care of my plants while I was away. I want to thank her. I rang her bell when I got back last night. There was no answer. I tried again this morning — no answer. She hasn't gone away, has she?"

"Yes," Mr. Clark said. "She left right after you did, nearly two weeks ago. Her sister in Mexico got sick. I got a postcard from Ann yesterday."

He took a picture postcard out of his pocket. Agatha took it and looked at it. On the front was a picture of the Statue of Liberty in New York Harbor. On the back the postmark was not clear. The writing was in red ink. It matched the red in the American flag on the stamp.

"Dear Mr. Clark," it read. "My sister is better, but I don't know when I'll be back. I hope all is well. Ann Ramirez."

Agatha handed the postcard back to Mr. Clark.

"Oh, dear," she said. "I forgot something. I'll have to go back upstairs."

When she got to her apartment, she made a phone call. Within 10 minutes a police car pulled up outside the building. An officer rushed upstairs to help Agatha open Ann's door with a master key. Two other officers went to find Clark.

Ann Ramirez was lying on the floor of her living room. She was tied up and gagged. The two officers untied her. Then Agatha got a glass of water from the kitchen. She held it to Ann's lips, and Ann drank deeply.

"Thank goodness you found me," she said. "It was Mr. Clark. Yesterday morning he tied me up and left me to starve. He took all my money and jewels. He said he could prove to anybody who asked that I was in Mexico."

"He showed me a postcard," Agatha said. "But there were three good reasons I knew he was lying. That card couldn't have come from you."

What were the three reasons? For an extra clue, turn to page 38.

—Julia Piggin

(The answer is in the Teachers' Edition.)

Answers For Mini-Mysteries Pages 53-54

Clues: knew, it, was, George

Even though George and Gary were identical twins who dressed alike, Mrs. Moore knew it was George, not Gary, who rushed past her - probably because she had learned about the plan to elope from Sue, her favorite student nurse.

Mystery for students to solve.

1. The plants in Agatha's apartment were well taken care of. She was supposed to be in Mexico for 2 weeks according to Mr. Clark.

2. The stamp on the card. You don't need a stamp on a postcard. The postmark was not clear.

3. Why would anyone send a postcard with the Statue of Liberty on it from Mexico?

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students discuss the possible murderer based on their inferences relative to the story they read yesterday. Students write a mystery themselves. Students are introduced to literature appropriate to their age which can be considered mystery.	Read story and do work assigned previous day.

73 74

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Call on various students to give the written conclusions they gave for mystery. Read them conclusion that you have for the mystery. Give them information about some mystery books they may want to read. Sherlock Holmes stories; Perry Mason book in elementary libraries - 2 min. mysteries; Great Brain Books. Choose your own adventure by Packard. (Optional) You may want to play Caedmon record reading by Rathbone of Sherlock Holmes story. Tell students that some writers in writing story start with the end and beginning and then proceed from there. Writers of mystery books often do this. Give example of how this would work by using one of the Mini-Mysteries as an example. Take another story they all know - such as Cinderella or Snow White and show how you could work backwards and the choices that the writer has. As assignment, they are to write a mystery which has some facts, but also misleading facts, which have to be considered in reaching a conclusion.	Discussion of yesterday's mystery. Write a mystery. The teacher may want to provide 3 starter sentences, or an opening paragraph as an option for students to use who have difficulty just beginning.	Optional - Record mentioned in teacher approaches. Books available in school library which are mysteries which can be used as a classroom interest center. FOLLOW-UP/EVALUATION The quality of stories they have written will be the criteria.

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students will identify the 3 parts of a syllogism.	

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TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
We will be studying a relationship that has been used in debates and discussions for as long as man has been able to reason. Give them an example: Fish have gills. A bass is a fish. A bass has gills. How many parts are there to a syllogism? Tell them the function of each part. A general statement identifying a relationship between two terms. A specific example of the two terms. (or the negation of either term) Example: All Siamese are cats. Peke is a parakeet. Peke is not a cat. Or, you can't say, indeterminate. All Siamese are cats. Mitten is not a Siamese. We can't say. A conclusion based on the 2 relationships. (Visual - A bulletin board with examples would be helpful.) Ask students if anyone could think of a 3 part syllogism such as the example. Write the example on the board.	Worksheet which students finish. They must provide conclusion to a syllogism. Divide a statement into the 3 parts of a syllogism.	Bulletin board, or transparency which shows the 3 parts of a syllogism and examples of such. FOLLOW-UP/EVALUATION

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS

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TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Worksheet, we will do some work on a worksheet which has 2 parts. Writing the concluding statement for a syllogism. Taking mixed up syllogisms and rearranging them into the 3 parts as in the model cited to them. Time may also be given to finish mystery.		FOLLOW-UP/EVALUATION Answered 70% of worksheet correctly.

81

82

Syllogisms

Complete these syllogisms:

1. All parakeets are birds. Amanda is a parakeet.

2. All students at Memorial work hard. Patty is a student at Memorial.

3. Fruit is good for you. An orange is a fruit.

4. All Siamese are cats. Mandy is a Siamese.

5. Whenever Fred passes the store he buys candy. Fred is going to the store.

6. When Dad yells come to dinner, I come. Dad yelled come to dinner.

The following syllogisms are not in the correct order:
   a. general statement
   b. specific example
   c. conclusion
Rewrite them on the back in the correct order.

1. I bit into a lemon. My mouth puckered. If I bite into a lemon, my mouth puckers.

2. If I come toward Rover he growls. Rover growled. I moved toward Rover.

3. The coyote chased the roadrunner. The coyote chases the roadrunner but never catches him. He didn't catch him.

4. Many plants are good to eat. Dieffenbachia is a plant. Indeterminate.

5. It is a well crafted piece of furniture. I bought a chair from Jim. Jim makes well crafted furniture.

6. Whenever Bill has a toothache, he lies down. Indeterminate. Bill is lying down.

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students will complete syllogisms by making choices from a group of words.	Yesterday's lesson.
Students will complete syllogisms with their own word.	Student has turned in mystery so teacher can proofread it.
Students will be shown that a syllogism can be used effectively to prove an incorrect point.	
Students will rewrite their mystery stories that they had written earlier.	

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
We will review the parts of a syllogism by taking a mixed up syllogism, putting it in the right order and reviewing the function of each part. Example: mixed up - Homer is a dog. All beagles are dogs. Homer is a beagle. We will do a short worksheet. Students will complete a syllogism given only the first line. We will see that a syllogism can be constructed to prove a falsity. Simple example: Adults are president of the U.S. My father is an adult. My father is president of the U.S. Ask for students to volunteer false syllogisms. Ask each student to write down two on their paper. Emphasize that a syllogism is just a device for proving a point, true or untrue, depending how you set it up. Ask students to read their syllogisms. Go over corrections used on students' mysteries, such as sp. - spelling mistake. Have them go ahead and rewrite their mysteries.	Review work on syllogisms. Do worksheet completing syllogisms. Write false syllogism. Rewrite their mysteries.	Student written mysteries. FOLLOW-UP/EVALUATION Easy to read, gramatically correct mystery.

Syllogism

Complete these syllogisms by adding the 2nd and 3rd parts.

1. If my dog meets a cat, he chases her.

2. The city of Beloit collects refuse on all city streets.

3. At home, when Joe is hungry, he heads straight for the refrigerator.

4. Most kids enjoy watching a circus.

5. In the Beloit area, deciduous trees lose their leaves in fall.

6. Liquids freeze when the temperature falls to 32 degrees Fahrenheit.

Write 2 syllogisms that prove a falsity.

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students will use inferences to draw their own conclusions about classmates' stories. Introduce term probability and discuss application of it in life.	Know the meaning of inference.

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TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Students have been told that some will be asked today to read their mysteries. Those selected will do so. When they are finished the teacher will ask the class what inferences can be used in developing the guilt of a story character. Then we will ask members of the class to give their solution to crime. The author will tell us the correct conclusion. All mysterier will be gathered together in booklet form for members of the class to read. Ask if anyone can tell us what probability is. A given definition is: probability is a mathematical concept used in predicting the likelihood of certain events occurring. Ask if anyone can think of how we use it? It covers iffy situations such as: planning a picnic-(probability of rain); lending my bike to a friend - (probability he will take good care of it); spending my lunch money on doughnuts - (probability they will serve something I like in the lunchroom). How do they use probability in deciding to market a new product? Run a play in a football game? Buy stocks in the stock market?	Students read stories. Others point out inferences and draw conclusions. Students discuss applications of probability in their life and adult life.	Student stories. Think Ink Publications, their kit on probability. Photocopies of cards 1 thru 8 to be used for a bulletin board display. FOLLOW-UP/EVALUATION

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS

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TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Read to them cards 2 - 5 you have on the bulletin board display. 4 concepts covered: 1) Probability, 2) Experiment, 3) Event, 4) Possibility. We will use these concepts in our discussion of probability. Use card 10 entitled "A Flat Problem" to apply the 4 above terms.		FOLLOW-UP/EVALUATION Students' ability to use author's inferences in drawing a conclusion.

PROBABILITY

A number value expressing the likelihood of a specific outcome for a specific event.

The probability of finding a live dinosaur in your garden is *0*.

2

EXPERIMENT

A situation with a defined set of specific possible outcomes.

Rolling the dice to determine the number of spaces to move in ***Monopoly*** is an *experiment*.

3

EVENT

One specific outcome from a set of all possible outcomes of a situation.

Finishing first in the 100-yard dash is an *event*.

4

THEORETICAL PROBABILITY

The number value used in experiments where there is a fixed number of possible outcomes — each equally possible.

When your mother cat has kittens, there are 2 possible outcomes for each kitten — male or female. Each is *equally* possible.

6

EMPIRICAL PROBABILITY

Probabilities based on the frequency of different possible outcomes of an experiment repeated many times.

In other words — based on *experience.*

7

PROBABILITY — WHAT IS IT?

PROBABILITY is a number value given to the chances of a specific event taking place.

This value is found by comparing all the possible results of an experiment with the *actual* results.

The following basic activities are designed to acquaint you with the vocabulary and process of probability experiments.

By working through each one, you will become aware of the information needed to predict possibilities and probabilities.

They will help you see the difference in "taking a wild chance" and making an educated guess.

A FLAT PROBLEM

What's the probability of your bike tire going flat before you get to your friend's house?

Lots of factors will have to be considered before you can predict this . . .

Is it an old tire or a new one?

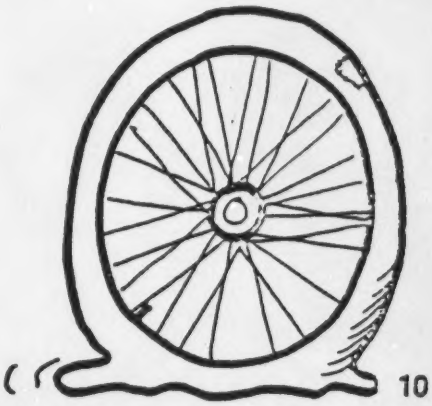
Does it feel full now or is it a little low?

How far are you going to have to ride?

Do you have to go over rough ground or smooth path?

Think of some other factors that would affect the probability of a flat tire. What conditions would lead you to predict the highest probability of a flat?

What conditions would make the probability of a flat very low?



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UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Students use probability equation to answer question.	Some basic familiarity with fractions and reducing a fraction.
Students list possibilities to question.	
Students are introduced to game of mastermind.	

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Review the 4 terms introduced yesterday. Probability, Experiment, Event, Possibility Use these in applying to "experiment" of possible outcome of tossing a coin. Heads or tails has one chance in two of turning up. The mathematical equation is: Probability = ways a specific (Event). event can happen number of possible outcomes $Pr = \frac{E}{N}$ $Pr = \frac{1}{2}$ Use card 15 to follow up on this equation. Pose similar problems to students. Use card 13 to show how the fractions are reduced. Do short worksheet using the idea. Introduce Mastermind, the game, which depends heavily on basing logical decisions on previous moves. Students are asked to sign up for tomorrow's activities involving use of logic.	Review previous day's work. Students respond to problems in terms of probability as expressed as fraction. Students are introduced to the game of Mastermind.	Think Ink, their kit on probability. Copies of game Mastermind so that there is 1 copy for every 2 players. Duplication of cards 15, 13 for classroom use. FOLLOW-UP/EVALUATION

RATINGS SCOREBOARD

TV SHOW TYPE	BOYS	GIRLS	TOTAL
Detective	𝍸 𝍸 III	𝍸 II	20
Situation Comedy	𝍸	𝍸 I	11
Soap	I	𝍸	6
Sports	𝍸 II	III	10
Documentary	II	I	3

50 students in grades 4 through 8.

According to responses to the question, "What is your favorite TV show?", 20 of the 50 mentioned the name of a detective show.

In talking probability, we could say, "The probability of a detective show being the favorite of a student in grades 4 through 8 is 20 in 50. This could also be written as a fraction 20/50 or 2/5.

If you considered only girls' responses, what would the results be?

Another way to say it would be, "Two out of 5 students in grades 4 through 8 prefer detective shows on TV to other types."

In what areas would this type of information be useful?

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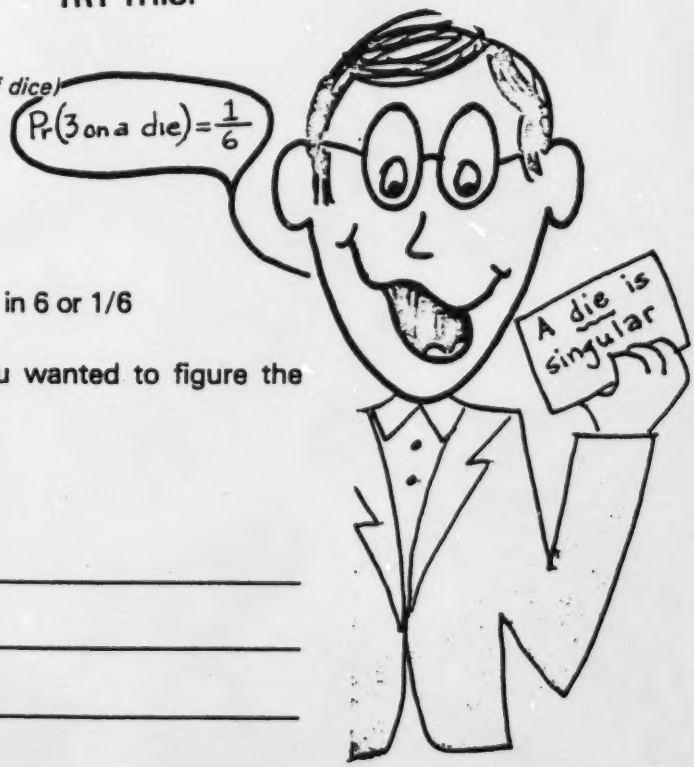
TRY THIS!



EXPERIMENT: Rolling a die *(die is the singular form of dice)*

SPECIFIC EVENT: Rolling a 3

***LIST* OF POSSIBILITIES:** 1,2,3,4,5,6

***NUMBER* OF POSSIBILITIES:** 6

CHANCE OF THE SPECIFIC EVENT: (3) 1

PROBABILITY OF SPECIFIC EVENT: (3) 1 chance in 6 or 1/6

How would the information above change if you wanted to figure the probability of rolling either a *3* or a *5*?

EXPERIMENT: Rolling a die

SPECIFIC EVENT: Rolling either a *3* or *5*

***LIST* OF POSSIBILITIES:** _____

***NUMBER* OF POSSIBILITIES:** _____

CHANCE OF A SPECIFIC EVENT: (3 or 5) _____

PROBABILITY OF SPECIFIC EVENT: (3 or 5) _____

15

Probability

1. If there are 10 apples in a basket, 5 green and 5 ripe, what is the chance you would get a ripe apple is you took one without looking?

2. If there are 15 packages, all wrapped the same way, 5 with candy in them, what is the chance you would pick a package without candy in it?

3. What is the chance that you would pick a blue sweater, without looking, from a drawer in which there are 10 sweaters, 2 of them blue?

4. If you know 30 of the 45 basic addition-subtraction facts, what is the chance you might be asked to state a fact you do not know?

total stones	8	15	32	20	24	20	40	16
red stones	4	6	20	6	8	5	24	0
black stones	4	9	12	10	12	15	16	16
Probability-red	$\frac{4}{8}=\frac{1}{2}$					$\frac{5}{20}=\frac{1}{4}$		
Probability-black			$\frac{12}{32}=\frac{3}{8}$					
Probability-other							$\frac{0}{40}$	

UNIT AREA: Enriched Language Arts LEVEL: 5 - 6

SUBTOPIC: Logical Thinking DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS
Review situations where probability is expressed as fraction.	Ability to multiply.
Show the multiplication for figuring the number of possibilities to a given situation.	If playing the game of Golf, some knowledge of angles and degrees.
Show students the games Mastermind and Golf as developed for Apple Computer.	
Students, depending on choice, will engage in situation involving logic.	

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Review work on probability with situations such as this: If there are 14 packages, all wrapped the same way, 10 with candy in them, what is the chance you would pick a package without candy in it? $\frac{4}{14} = \frac{2}{7}$ How many different ways could 3 students be seated in 3 desks? 123 213 132 312 231 321 The equation for this is 3 x 2 x 1 = 6, 6 possibilities. How many ways could 4 people be arranged in 4 seats? (24) Have cards 29 and 31 duplicated from probability kit. Do with students. Answers: (29 - Doughnuts: 80 combinations Ice Cream: 240 possibilities) (31 - Jeans: 240 possibilities) Caution: Not all problems in this set are easily understood. Example: In booklet, how many different ways can you arrange the letters A through F (320). I don't understand this myself. Ask students if anyone can explain this answer. Check with 'math expert' in your building or system.	Review yesterday's work. Work with problems to determine the total number of possibilities. Choose activity to finish period. Be introduced to computer games Mastermind and Golf in small group. Get an opportunity to play.	Ditto sheets of cards 29 and 31 from Probability Kit. Suggested story starters on board. Mastermind games. Chess games. Selected cards from kit for students to work with. **Computers, 2 if available, for students to use.**
		FOLLOW-UP/EVALUATION

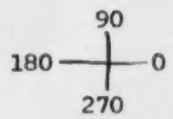
UNIT AREA: Enriched Language Arts

LEVEL: 5 - 6

SUBTOPIC: Logical Thinking

DEVELOPER: Braunreiter

OBJECTIVE	ENTRY SKILLS

TEACHER'S APPROACHES	STUDENT ACTIVITIES	RESOURCES
Show students games Mastermind and Golf on Apple Computer. (Take group if size is no more than 10 students, if more, can work with some at different times.) To play Golf, there will need to be some explanation of angles. You may need to draw small chart to help them. Example:  Depending on yesterday's choice, students may play Chess, Mastermind, use computers, write a mystery, or work with cards in Probability Kit.		FOLLOW-UP/EVALUATION

MULTIPLE MUNCHIES

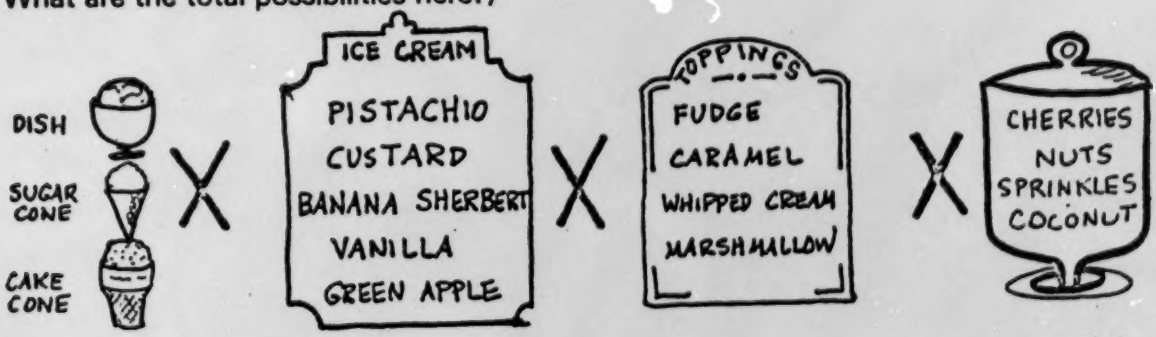
Consider doughnuts: What are the total possible combinations (*from which you could gain five pounds*)?

TYPES x FILLINGS x TOPPINGS - Total Possibilities

TYPE	FILLINGS		TOPPINGS	
CAKE	MAPLE	CHOCOLATE	NUTS	SPRINKLES
RAISED	VANILLA	CHERRY	COCONUT	SUGAR
	NONE	MOCHA	CINNAMON	
	CREAM	BLUEBERRY		

If an element is added, we increase the number of total possibilities considerably *(along with the chances of a significant stomach ache!)*.

What are the total possibilities here?)



29

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POSSIBILITIES

A jeans manufacturer offers a Spring line featuring:

SIX SMASHING STYLES

EIGHT ENCHANTING COLORS

FIVE FANTASTIC FABRICS

Assuming you have a selection of any combination of these three features, how many possibilities are there in the Spring line?

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